

4. Davis, R. E., "Hexane Extractable Nicotine in AB Tobacco," memo to R. Prasad, October 12, 1987.
5. Davis, R. E., "AB Determinations in Filler and Solutions," memo to R. Prasad, October 12, 1987.
6. Davis, R. E., "Hexane Extractable Nicotine in AB Tobacco," memo to R. Prasad, October 15, 1987.
7. Davis, R. E., "Ab Determinations in Filler," memo to R. Prasad, October 15, 1987.

III. HEADSPACE ANALYSIS OF PACKAGING MATERIALS

- A. Objective: To provide headspace analyses of packaging materials for residual solvents.
- B. Results: A Hewlett-Packard headspace sampler was interfaced to an HP-5880A GC. Samples of packaging material and tipping paper were analyzed for volatiles. Analysis and reporting of results are currently in progress.
- C. Plans: To continue analyses as required.

IV. X-RAY FLUORESCENCE (XRF)

- A. Objective: To provide qualitative and quantitative elemental data on tobacco, cigarette paper and material evaluation samples.
- B. Results:

Qualitative Analysis

Materials evaluation: XRF was used to determine elemental content in GRAFOIL pipe sealant and AGELESS oxygen absorber. A foreign matter sample (FM-122), a brown dust from the floor of a transport trailer, was also analyzed.

Several paper, tobacco, and other samples were also analyzed.

Quantitative Analysis

Thirty-four samples were analyzed for 7 elements (Mg, Si, P, S, Cl, K, and Ca) using the Fundamental Parameters software.

- C. References:

1. Grantham, P. F., "Qualitative X-ray Fluorescence Scan of Smoke-Check Detector Strips," memo to R. A. Fenner, October 13, 1987.
2. PM Notebook #8543, pp. 48-49.

V. ATOMIC ABSORPTION

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- A. Objective: To provide elemental determinations on tobacco and cigarette paper samples.
- B. Results: A total of 296 atomic absorption determinations were performed this month. Sample types included treated filler, cigarette papers, modified size, CEL, SEL, and centrifuge sludges. A method for the determination of Se in ground filler has been developed. This method uses a modified microwave digestion of the sample and determination of Se using hydride generation atomic absorption. Thirty-four samples were analyzed using this method.
- C. Plans: Analyze thirty-one samples of Japanese cigarettes for Se.
- D. References:
1. PM Notebook #8394, p. 22.
 2. PM Notebook #8543, pp. 36-44 and 48-49.

VI. RESPONSE TO ANALYTICAL REQUESTS

- A. Objective: To provide analytical support to R&D and Operations personnel and projects.
- B. Results:
- Analyses and investigations by the project personnel during the month of October included:
- Nicotine determinations were performed on 246 samples from various submitters.
- Determination of methoxy content of several degraded pectin samples.
- Determination of ethanol content in several types of samples for the menthol on foil project.
- Two customer complaint samples were analyzed for possible contaminants.
- C. References:
1. Ingraham, D. F., "CC 870915001, Control no. 87095 - Marlboro Lights 100's - Clayton Iverson," memo to J. J. Pollard, October 2, 1987.
 2. Ingraham, D. F., "CC 870929034, Control no. 87097 - Merit KS - Beverly Allen," memo to J. J. Pollard, October 13, 1987.
 3. Ingraham, D. F., "Analysis of Red Pellet from Filter," memo to R. H. Cox, October 15, 1987.

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PROJECT NUMBER: 6505
PROJECT TITLE: Special Investigations/Methods Development
PROJECT LEADER: D. F. Ingraham
PERIOD COVERED: October, 1987

I. PESTICIDE LABORATORY

- A. Objective: Provide analytical data for pesticides in offshore leaf purchase.
- B. Results: The 25 samples which were in progress last month have been completed. No pesticides were out of limits. Eight additional samples received last month are still in progress.
- C. Plans: Continue analyses on the eight samples. Finish investigation on the new USDA herbicide method so that conclusions can be drawn as to its efficacy. Facilitate transfer of methods to QA.

II. PROJECT ART

- A. Objective: To investigate the role and fate of ammonia in the ammonium bicarbonate (AB) application.
- B. Results: AB determinations have been made on AB spray solutions and sprayed filler based on the determination of ammonia by an ammonia electrode. Hexane extracted nicotine values have also been determined for the sprayed filler to be used as a predictor of the carbon dioxide extraction efficiency of nicotine from the same filler. Equipment was installed in the pilot plant for the determination of AB containing materials and appropriate personnel have been trained on its use. It was determined that AB which had been hand-sprayed on filler did not lose ammonia under laboratory conditions during a 24 hour period. After one week there was a 64% decrease in soluble ammonia. Forty-nine additional nicotine analyses were completed and reported to Project ART personnel.
- C. Plans: To further investigate the loss of both ammonia and carbon dioxide during and after spraying.
- D. References:
 1. Davis, R. E., "Reporting AB Values," memo to R. Prasad, September 29, 1987.
 2. Davis, R. E., "Summary of AB Results for Park 500," memo to R. Prasad, September 30, 1987.
 3. Davis, R. E., "The Determination of AB on Filler," memo to R. Prasad, October 6, 1987.

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